

A pair of linear maps preserving rank-one nilpotent matrix

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Abstract

Let $M_n(\mathbb{C})$ be the $n \times n$ matrix ring over the field of complex numbers $\mathbb{C}$. In this paper, we discuss a pair of linear bijective maps g, h over $M_n(\mathbb{C})$, which satisfy $g(A)h(B) = M$ whenever $AB = N$ for $A, B \in M_n(\mathbb{C})$, where M, N are rank-one nilpotent matrices.

Keywords

Maps preserving products; nilpotent matrices.

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